

AMENDMENTS TO THE CLAIMS:

The following listing of claims replaces all prior versions, and all prior listings, of claims in the application.

Listing of Claims:

Claim 1. (Cancelled).

2. (Currently amended) A process for manufacturing a semiconductor integrated circuit device, comprising the steps of:

(a) forming a metal layer including copper as its principal component over an insulating film over a first major surface of a wafer, the insulating film having a wiring groove pattern;

(b) removing the metal layer outside the wiring groove pattern by a chemical mechanical polishing method so as to leave the metal layer in the wiring groove pattern, said removing being performed in a chemical mechanical polishing section of a single wafer processing apparatus;

(c) after step (b), transferring the wafer to a post cleaning section of the single wafer processing apparatus, while keeping a surface of the metal layer left in the wiring groove pattern of the first major surface of the wafer wet with moving water;

(d) performing scrub or brush cleaning to the first major surface of the wafer with a liquid chemical or pure water in the post cleaning section; and

(e) after step (d), making the first major surface of the wafer dry, wherein the single wafer processing apparatus has a light shielding structure enclosing the post cleaning section and between the chemical mechanical polishing section and the post cleaning section.

3. (Previously presented) A process for manufacturing a semiconductor integrated circuit device according to Claim 2, wherein the moving water is a water shower.

4. (Previously presented) A process for manufacturing a semiconductor integrated circuit device according to Claim 3, wherein the metal layer left in the wiring groove pattern in step (b) constitutes a portion of a metal wiring of a dual damascene wiring.

5. (Currently amended) A process for manufacturing a semiconductor integrated circuit device according to Claim 4, wherein step (d) is performed prior to a substantial progress of corrosion of the surface of the metal layer left in the wiring groove pattern.

6. (Currently amended) A process for manufacturing a semiconductor integrated circuit device according to Claim 5, wherein the surface of the metal layer left in the wiring groove pattern of the first major surface of the wafer is kept wet from the end of step (b) to the end of step (d).

7. (Previously presented) A process for manufacturing a semiconductor integrated circuit device according to Claim 6, wherein the moving water is a pure water shower.

8. (Previously presented) A process for manufacturing a semiconductor integrated circuit device according to Claim 2, wherein step (a) includes the substep of:

(i) forming the metal layer including copper as its principal component over an upper surface of the insulating film and inside the wiring groove pattern by electroplating.

9. (Previously presented) A process for manufacturing a semiconductor integrated circuit device according to Claim 2, wherein the metal layer left in the wiring groove pattern in step (b) constitutes a portion of a metal wiring of a dual damascene wiring.

10. (Currently amended) A process for manufacturing a semiconductor integrated circuit device according to Claim 2, wherein the surface of the metal layer left in the wiring groove of the first major surface of the wafer is kept wet from the end of step (b) to the end of step (d).

11. (Previously presented) A process for manufacturing a semiconductor integrated circuit device according to Claim 3, wherein the light shielding structure includes a light shielding sheet.

12. (Previously presented) A process for manufacturing a semiconductor integrated circuit device according to Claim 4, wherein the light shielding structure includes a light shielding sheet.

13. (Currently amended) A process for manufacturing a semiconductor integrated circuit device, comprising the steps of:

(a) forming a metal layer over an insulating film over a first major surface of a wafer, the insulating film having first and second wiring groove patterns;

(b) removing the metal layer outside the first and second wiring groove patterns by a chemical mechanical polishing method so as to leave the metal layer in the first and second wiring groove patterns and thereby electrically dividing metal wiring members inside the first and second wiring groove patterns, said removing being performed in a chemical mechanical polishing section of a single wafer processing apparatus;

(c) after step (b), transferring the wafer to a post cleaning section of the single wafer processing apparatus, while keeping a surface of the metal layer left in the first and second wiring groove patterns of the first major surface of the wafer wet with moving water;

(d) performing scrub or brush cleaning to the first major surface of the wafer with a liquid chemical or pure water in the post cleaning section; and

(e) after step (d), making the first major surface of the wafer dry,
wherein the single wafer processing apparatus has a light shielding structure enclosing the post cleaning section and between the chemical mechanical polishing section and the post cleaning section.

14. (Previously presented) A process for manufacturing a semiconductor integrated circuit device according to Claim 13, wherein the moving water is a water shower.

15. (Previously presented) A process for manufacturing a semiconductor integrated circuit device according to Claim 14, wherein portions of the metal layer left inside the first and second wiring groove patterns in step (b) constitute portions of metal wiring members of a dual damascene wiring.

16. (Currently amended) A process for manufacturing a semiconductor integrated circuit device according to Claim 15, wherein step (d) is performed prior to a substantial progress of corrosion of the surface of the metal layer left in the first and second wiring groove patterns.

17. (Currently amended) A process for manufacturing a semiconductor integrated circuit device according to Claim 16, wherein the surface of the metal layer left in the first and second wiring groove patterns of the first major surface of the wafer is kept wet from the end of step (b) to the end of step (d).

18. (Previously presented) A process for manufacturing a semiconductor integrated circuit device according to Claim 17, wherein the moving water is a pure water shower.

19. (Previously presented) A process for manufacturing a semiconductor integrated circuit device according to Claim 13, wherein portions of the metal layer left inside the first and second wiring groove patterns in step (b) constitute portions of metal wiring members of a dual damascene wiring.

20. (Currently amended) A process for manufacturing a semiconductor integrated circuit device according to Claim 13, wherein step (d) is performed prior to a substantial progress of corrosion of the surface of the metal layer left in the first and second wiring groove patterns.

21. (Currently amended) A process for manufacturing a semiconductor integrated circuit device according to Claim 13, wherein the surface of the metal layer left in the first and second wiring groove patterns of the first major surface of the wafer is kept wet from the end of step (b) to the end of step (d).

22. (New) A process for manufacturing a semiconductor integrated circuit device according to Claim 2, wherein the chemical mechanical polishing is performed using an abrasive grain-free chemical mechanical polishing procedure.

23. (New) A process for manufacturing a semiconductor integrated circuit device according to Claim 13, wherein the chemical mechanical polishing is performed using an abrasive grain-free chemical mechanical polishing procedure.